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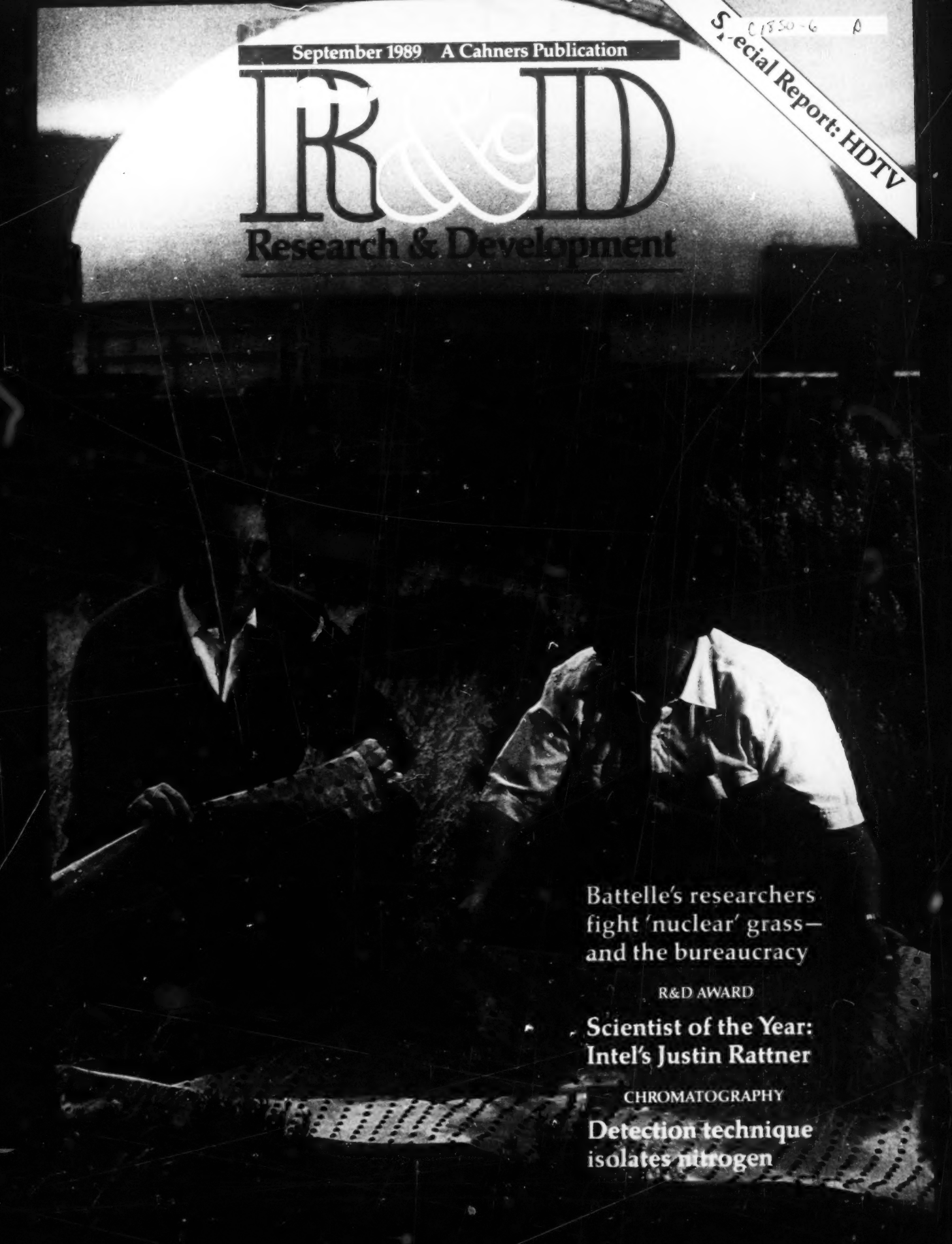
R&D

Research & Development

Special Report: HDTV



Battelle's researchers fight 'nuclear' grass—and the bureaucracy

R&D AWARD

Scientist of the Year: Intel's Justin Rattner

CHROMATOGRAPHY

Detection technique isolates nitrogen

R&D

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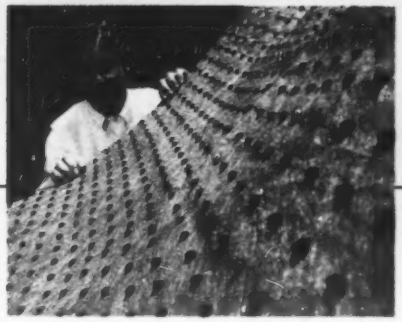

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Mergers have little effect on R&D, experts say

LEVERAGED BUYOUTS (LBOs) and other corporate restructurings may have less impact on industry research spending than experts once believed, according to testimony given before a Congressional committee.

"The impact of actual takeovers is probably much smaller than that of high capital costs and competitive pressures, simply because manufacturers are more affected by stiff foreign competition than by actual takeover attempts," says Julie Fox Gorte, project director for the Office of Technology Assessment.

Gorte's testimony before the House science, research, and technology subcommittee concurred with that given by Bronwyn Hall, assistant professor of economics at Univ. of California–Berkeley.

"Manufacturing firms involved in acquisitions behave very much like other firms with respect to R&D—there is little sign of cuts which might be attributed to consolidation of laboratories or elimination of duplicative efforts after a merger," says Hall.

The premise that the huge debts incurred by companies during restructurings dramatically cuts into R&D investments has not been verified by studies performed by Gorte and Hall.

"In fact, restructurings may be a contributor to more-rapid technological change by hastening the downsizing and elimination of backward firms," says Hall.

Both experts conclude that no government intervention is required even though some companies have cut R&D to defend against takeovers. Polaroid, for example, cut R&D in response to a hostile takeover bid from Shamrock Holdings, and Owens-Corning cut R&D in half after a takeover attempt by Wickes.

The level of restructurings is significant, but not overwhelming, says Hall, and most have been concentrated in low-tech industries. "LBOs generally are not appropriate for high-tech businesses," she says.

"Since mergers and acquisitions are only part of the economic climate that discourages R&D, remedies are perhaps better directed against the short-sightedness presently fostered by financial markets and not against mergers and acquisitions," says Gorte.

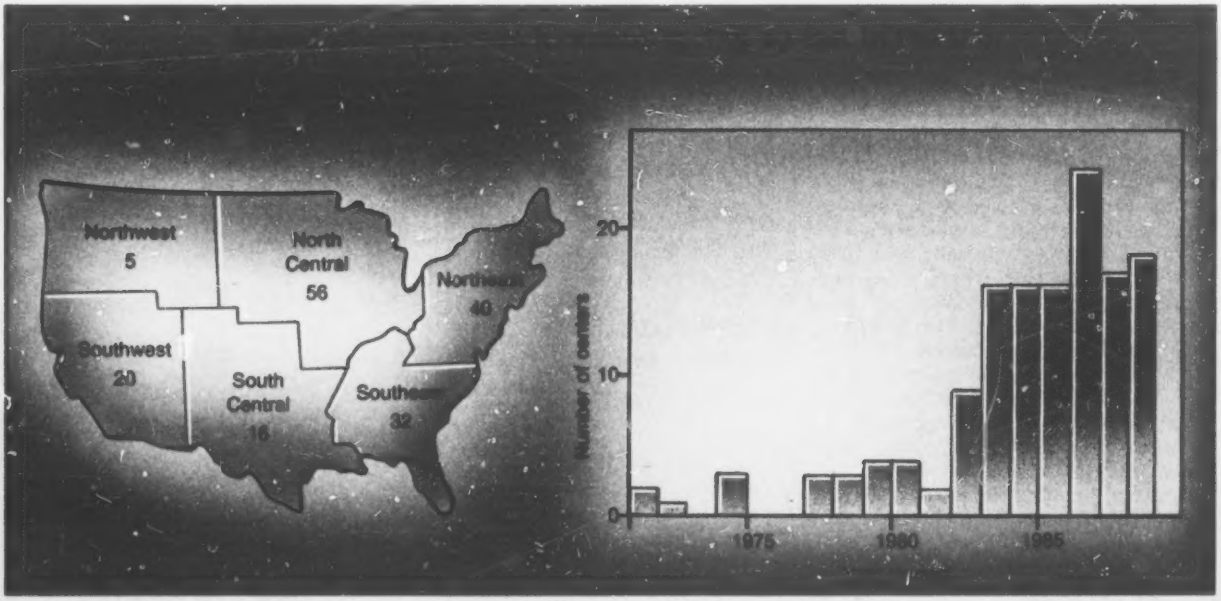
Both Hall and Gorte agree that the high real cost of investment monies for U.S. firms and the emphasis on short-term profits are much more damaging to long-term R&D levels than takeovers are. □

Research centers bloom, but will the money last?

A NEW "Directory of Manufacturing Research Centers" reveals a dramatic growth of new centers over the past six years. Of the 169 centers listed in the directory, prepared by the Chicago-based Manufacturing Technology Information Analysis Center (MTIAC), 118, or 70%, have been started since 1983.

"The big question is how many of these centers are going to survive. Many have one to five years of seed money but, after that runs out, a lot may find their way into desk drawers," says Harold Wakely, who compiled the directory.

New centers seeking funds are finding that many industrial sources have already been tapped out. While some



Of the 169 manufacturing research centers that exist in the United States, more than two thirds were started within the past six years. The map shows the number of centers in each of six geographical regions of the country.

"hot" technologies may expand, there actually may be retrenchment in others that have less potential.

Nearly 70% of the existing centers are associated with university or technical institutes. However, many of the future centers started will be set up in community colleges. "You will see more of these types of centers and fewer basic research labs in the future," says Wakely.

For example, the Center for Occupational R&D (CORD), Waco, TX, is a consortium of more than 100 community colleges that is involved with the application of existing technologies and not research.

Government-funded centers will most likely receive increased funding. The National Institute of Standards & Technology already funds three centers—the Great Lakes Manufacturing Technology Center in Cleveland, the Northeast Manufacturing Center in Troy, NY, and the South Carolina Technology Cooperative in Columbia.

To be listed in MTIAC's directory, centers must perform manufacturing research and must be available to manufacturers on a free or fee basis. Cost of the directory is $75 for either hard copy or computer disk. For a copy call MTIAC at 312/567-4730. □

Trade barriers continue to fall, but slowly

LICENSING REQUIREMENTS for the export of computers, communication equipment, and machine tools to Canada, 13 NATO members, Japan, Australia, Finland, and Switzerland have been removed by the U.S. Dept. of Commerce.

This action is viewed as a positive step by the Scientific Apparatus Makers Assn. (SAMA). "It will decontrol [the export and sale of] analytical instruments which have computer components," says Michael Duff, SAMA's vice president of government affairs.

"However, since the technological life of instrumentation is relatively short, the key to being competitive is to ensure that our trade controls mirror current products," says Duff.

Despite this liberalization, the 1988 Omnibus Trade Act still requires licensing for supercomputers and advanced mainframe computers to prevent these products from being shipped to Soviet-bloc countries.

A week after DOC loosened exporting requirements, the Administration allowed the sale of personal computers to Soviet-bloc nations. This action was quickly rebuked by the Defense Dept. as giving the Soviets products with military applications. □

Top U.S. R&D spenders slip in world ranking

FOUR U.S. COMPANIES that were among the 10 biggest R&D spenders of 1988 will still be in the top 10 in 1990, but they will be lower on the totem pole.

That's because foreign-based firms will have leapfrogged them in research spending, according to a recent forecast by Schonfeld & Associates, an Evanston, IL, consulting firm.

General Motors and IBM will still be number one and two through 1990. But Ford will drop from fourth to fifth in the standings and AT&T will fall from sixth to ninth.

Japan's Matsushita (No. 4 in 1990), NEC (No. 6), and Toshiba (No. 7) and Europe's NV Philips (No. 8) all moved up in the two-year period.

The computer industry will become the biggest R&D spender in 1990 with $21.1 billion, up 11.5% from 1988, according to the forecast. This surpasses the lead now held by the communications industry, which will grow only 3.4% to $20.2 billion.

Both Japanese and European firms are forecast to have significant increases in R&D spending. While 13 of the top 25 spenders are U.S. based, their average increase in R&D spending is 7.9%. The 7 Japanese firms in the top 25 are expected to average a 14.4% increase, while the 5 European firms will increase on average 18.8%.

The report, "R&D Ratios & Budgets," ($295) lists 1988 to 1990 R&D data for more than 2,700 firms. To order, contact Schonfeld & Associates, 2530 Crawford Ave, Evanston, IL 60201; 312/869-5556. □

Engineers pick the 10 best places to work

TO MAKE the Society of Manufacturing Engineers' 1989 list of the 10 best places to work in the U.S., a manufacturer has to involve researchers, engineers, and nontechnical staff in a team approach.

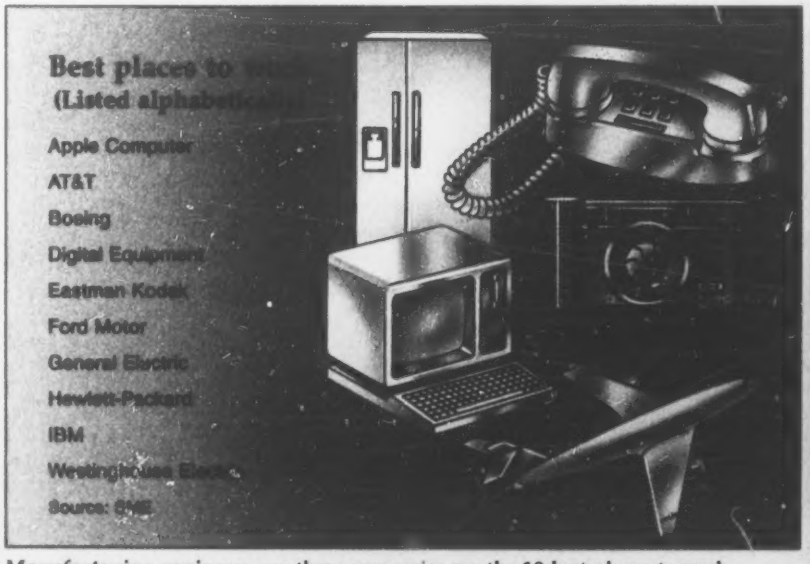
Companies were chosen by SME on the basis of their quality of supervision, commitment to high-quality products, and challenging, rewarding job opportunities.

"A successful program at AT&T allows R&D employes and manufacturing engineers to swap jobs for a six-month period," says Joan Redebaugh, co-author of the study.

"Technical people at Boeing can follow a technology [career] trail and have all the benefits of [being] on a management path," says SME's Robert Stauffer.

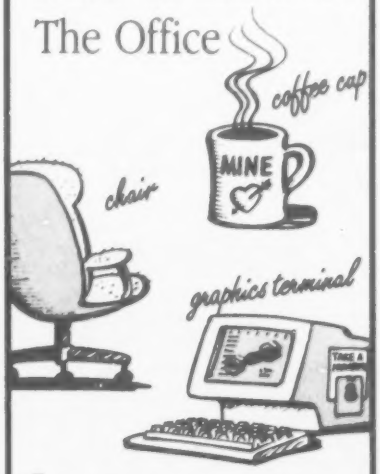
"We give our people a substantial amount of technical and intellectual freedom to do the right things," says Harold Edmondson, vice president of manufacturing at Hewlett-Packard.

Three of this year's winners—Apple, GE, and IBM—also won awards last year. **R&D**



Manufacturing engineers say these companies are the 10 best places to work.

Three Things You Shouldn't Have To Share At The Office



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R&D

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